

## Module Handbook

Module Name:	General Microbiology (Practical Work)
Module Level:	Bachelor
Abbreviation, if applicable:	BIM203
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/term:	Odd
Module coordinator(s):	Tri Nurhariyati, S.Si, M.Kes.
Lecturer(s):	Tri Nurhariyati, S.Si, M.Kes. Prof. Dr. Ir. Tini Surtiningsih, DEA Drs. Salamun, M.Kes Dr. Fatimah Drs. Agus Supriyanto, M.Kes.
Language:	Indonesian language
Classification within the curriculum	Compulsory Course / <del>Elective Studies</del>
Teaching format / class hours per week during semester:	300 minutes/ week
Workload:	100 min lecture + 100 min structural assignment + 100 min self-assignment x 13 weeks; total 3900 min = 65 hours $65/25 = 2.6$ ECTS
Credit point	1
Requirements	-
Learning goals/competencies	<p><b>General competence (skill)</b> Students are able to elaborate and practicing on laboratory preparation, cultivation and quantification method, and microbial characterization</p> <p><b>Specific competence</b></p> <ol style="list-style-type: none"> <li>1. Students are able to show kinds of utilities are used in microbiology work and practicing several technique of equipment sterilization</li> <li>2. Students are able to prepare several kinds of media and practicing how to make microbial growth media</li> <li>3. Students are able to elaborate various of transporting microbes aseptically</li> <li>4. Students are able to elaborate the mixed of microbial isolation</li> <li>5. Students are able to elaborate the microbial characterization (bacteria, yeast, and mold)</li> <li>6. Students are able to elaborate various microbial painting technique</li> <li>7. Students are able to elaborate determining the number and size of microscopic microbes</li> <li>8. Students are able to elaborate calculating on quantity of microbes</li> <li>9. Students are able to elaborate the curve microbes growth</li> </ol>

	<ol style="list-style-type: none"> <li>10. Students are able to elaborate test a variety of environmental factors on microbial growth</li> <li>11. Students are able to elaborate a variety of physiological bacteria testing and identification</li> <li>12. Students are able to practice a variety of microbial fermentation</li> <li>13. Students are able to elaborate water microbes test</li> </ol>
Content	<p>Technique of equipment sterilization, media and practicing how to make microbial growth media, various technique of transporting microbes aseptically, microbial isolation, the microbial characterization (bacteria, yeast, and mold), microbial painting technique, determining the number and size of microscopic microbes, calculating on quantity of microbes, curve microbes growth</p> <ol style="list-style-type: none"> <li>1. Students are able to elaborate test a variety of environmental factors on microbial growth</li> <li>2. Students are able to elaborate a variety of physiological bacteria testing and identification</li> <li>3. Students are able to practice a variety of microbial fermentation</li> <li>4. Students are able to elaborate water microbes test</li> </ol>
Soft skill Attribute	Dicipline and team work
Study/ exam achievements	<p>Students are considered to be competent and pass if at least get 40% of maximum. Final score (NA) is calculated as follow: Pre Test (25%), Paper project (35%), final exam lab (40%)</p> <p>Final index is defined as follow:</p> <p>A : 75 - 100  AB : 70 - 74.99  B : 65 - 69.99  BC : 60 - 64.99  C : 55 - 59.99  D : 40 - 54.99  E : 0 - 39.99</p>
Form of media	Laboratory equipment
Learning Method	Practical work and Discussion
Literature	<ol style="list-style-type: none"> <li>a. Cappucino, J.G. and Sherman, N. 1883. <i>Microbiology in Laboratory Manual</i>. Addison-Wesley Publishing Company.</li> <li>b. Hadioetomo R.S,1993. <i>Mikrobiologi Dasar dalam Praktek</i>, P.T Gramedia Pustaka Umum, Jakarta.</li> </ol>
Notes	this course is the prerequisite subjects to take more upper level courses such as practical of bacteriology, practical of applied microbiology, and practical of mycology